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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/384,088	08/27/1999	BRENDAN MURRAY	52817.000093	7366

29315 7590 09/27/2002

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ART UNIT	PAPER NUMBER
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2177

DATE MAILED: 09/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/384,088

Applicant(s)

MURRAY ET AL.

Examiner

Srirama Channavajjala

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to CPA

1. The request filed on August 28, 2002 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on Application No. 09/384,088 is acceptable and a CPA has been established, paper no. # 19. An action on the CPA follows.
2. Examiner acknowledges applicant's Preliminary Amendment and response to the previous office action filed on 8/28/2002, paper no. # 20.
3. Claims 1,9,17,25, and 33-36 have been amended, paper no. # 20.
4. Claims 37-39 have been added, paper no. # 20.
5. Examiner acknowledges applicant's Amendment filed on 4/10/2002, paper no.12.
6. Examiner acknowledges applicant's supplemental response to paper no.# 9 filed on 4/10/2002, paper no.15
7. Claims 33-36 have been added, paper no. # 12.
8. Claims 1-39 are pending in this application.

Drawings

9. Examiner acknowledges applicant's formal drawings filed on 4/10/2002, paper no. # 13
10. Examiner approved proposed drawing corrections to fig 1, a copy of approved drawing herewith enclosed, paper no. # 16, formal drawing(s) are required in response to this office action, paper no. # 16.

Priority

11. Acknowledgment is made of applicant's claim for domestic priority under 35 U.S.C. 119(e) based on the Provisional Application Serial No. 60/114,574, filed on 12/31/1998.

Information Disclosure Statement

12. The supplemental information disclosure statement filed on 7/10/2002, paper no. # 17 has been considered and a copy was enclosed with this office action, paper no. # 21.

13. The information disclosure statement filed on 8/27/1999, paper no. # 5 has been considered and a copy was enclosed with this office action, paper no. # 9.

14. The information disclosure statement filed on 4/10/2002, paper no. # 14 has been considered and a copy was enclosed with this office action, paper no. # 16.

Specification

The disclosure is objected to because of the following informalities:

15. Examiner acknowledges applicant provided the citation to the Cross-Referenced applications, however, applicant required including updating their status in response to this office action, paper no. # 16

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 2,10,18,26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear what is meant by “character of the message”, as this terms is not supported in the specifications. In the interest of compact prosecution, examiner assumes it should be “character of the search string”, and it is treated as “character of the search string” in the office action.

It is further noted that in paper no. # 20, applicant amended independent Claims 1,9,17,25, specifically replacing “message” with “search string”.

Appropriate correction required.

Double Patenting

17. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. Claims 1, 9, 17, and 25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,6,11,16 of co pending Application No. **09/384,089**, Although the conflicting claims are not identical, they are not patentably distinct from each other because in the present application Independent Claims 1, 9, 17, and 25 are accepting an input of the

characters of the message; evaluating the message by comparing the characters of the message to a predetermined set of candidate character sets to determine a match between the predetermined set of candidate character sets and the message; and generating a search index based on the results of the evaluation of the message and candidate character sets, while co-pending Application No. **09/384,089** independent Claims 1,6,11,16 are evaluating the characters of the message to built a linked list of available system fonts matching the characters, outputting the message by traversing the linked list of available system fonts for each portion of the multipart message. **it is noted that evaluating the message by comparing the characters of the message is same as evaluating the characters of the message with a linked list or with the available or predetermed list that matching the characters, or vice versa may be used** or expanded for further generating fine or sophisticated search index in a computer system. Accordingly, the instant Claims are very broad and within the scope of the Claims of the Application No. **09/384,089**.

It would have been obvious to one of ordinary skill in the art of data processing at the time the invention was made to modify the cited steps as indicated in claims 1,6,11,16 of the co-pending application since the omission and addition of the cited limitations would have not changed the process according to which the method of evaluating characters in a message to generate a search index information. Specifically, the ordinary skilled artisan would have been motivated to modify claim 1 of the cited co-pending application by replacing evaluating the characters of the message

to build a linked list with the evaluating the message by comparing the characters of the message to a predetermined set by generating a search index. The cited substitute elements would not interfere with the functionality of the steps previously claimed and would perform the same function of evaluating characters in a message to generate a search index or linked list in a computer system. In re Karlson, 136 USPQ 184 (CCPA 1963)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

19. Claims 1, 9, 17, and 25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,6,11,16 of co pending Application No. **09/384,542**, Although the conflicting claims are not identical, they are not patentably distinct from each other because in the present application Independent Claims 1, 9, 17, and 25 are accepting an input of the characters of the message; evaluating the message by comparing the characters of the message to a predetermined set of candidate character sets to determine a match between the predetermined set of candidate character sets and the message; and generating a search index based on the results of the evaluation of the message and candidate character sets, while co-pending Application No. **09/384,542** independent Claims 1,6,11,16 are evaluating the characters of the message to build a linked list of available system fonts matching the characters; and outputting the message by

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traversing the linked list of available system fonts. **It is noted that evaluating the message by comparing the characters of the message in a search index or index is same as evaluating the characters of the message with a linked list or with the available or predetermined list that matching the characters, because each item in the list contains a pointer to the next or preceding character(s) or vice versa may be used** or expanded for further generating fine or sophisticated search index in a computer system.

It would have been obvious to one of ordinary skill in the art of data processing at the time the invention was made to modify the cited steps as indicated in claims 1,6,11,16 of the co-pending application since the omission and addition of the cited limitations would have not changed the process according to which the method of evaluating characters in a message to generate a search index information. Specifically, the ordinary skilled artisan would have been motivated to modify claim 1 of the cited co-pending application by replacing evaluating the characters of the message to build a linked list with the evaluating the message by comparing the characters of the message to a predetermined set by generating a search index. The cited substitute elements would not interfere with the functionality of the steps previously claimed and would perform the same function of evaluating characters in a message to generate a search index or linked list in a computer system. In re Karlson, 136 USPQ 184 (CCPA 1963)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

20. Claims 1, 9, 17, and 25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,6,11,16 of co pending Application No. **09/384,541**, Although the conflicting claims are not identical, they are not patentably distinct from each other because in the present application Independent Claims 1, 9, 17, and 25 are accepting an input of the characters of the message; evaluating the message by comparing the characters of the message to a predetermined set of candidate character sets to determine a match between the predetermined set of candidate character sets and the message; and generating a search index based on the results of the evaluation of the message and candidate character sets, while co-pending Application No. **09/384,541** independent Claims 1,6,11,16 are evaluating the characters of the message to build a linked list of available system fonts matching the characters; and outputting the message by traversing the linked list of available system fonts. **It is noted that evaluating the message by comparing the characters of the message in a search index or index is same as evaluating the characters of the message with a linked list or with the available or predetermed list that matching the characters, because each item in the list contains a pointer to the next or preceding character(s) or vice versa may be used** or expanded for further generating fine or sophisticated search index in a computer system.

It would have been obvious to one of ordinary skill in the art of data processing at the time the invention was made to modify the cited steps as indicated in claims 1,6,11,16 of the co-pending application since the omission and addition of the cited limitations would have not changed the process according to which the method of evaluating characters in a message to generate a search index information.

Specifically, the ordinary skilled artisan would have been motivated to modify claim 1 of the cited co-pending application by replacing evaluating the characters of the message to build a linked list with the evaluating the message by comparing the characters of the message to a predetermined set by generating a search index. The cited substitute elements would not interfere with the functionality of the steps previously claimed and would perform the same function of evaluating characters in a message to generate a search index or linked list in a computer system. In re Karlson, 136 USPQ 184 (CCPA 1963)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

21. Claims 1, 9, 17, and 25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,6,11,16 of co pending Application No. **09/384,538**, Although the conflicting claims are not identical, they are not patentably distinct from each other because in the present application Independent Claims 1, 9, 17, and 25 are accepting an input of the characters of the message; evaluating the message by comparing the characters of the

message to a predetermined set of candidate character sets to determine a match between the predetermined set of candidate character sets and the message; and generating a search index based on the results of the evaluation of the message and candidate character sets, while co-pending Application No. **09/384,538** independent Claims 1,6,11,16 are evaluating the characters of the message to build a linked list of available system fonts matching the characters; and outputting the message by traversing the linked list of available system fonts. **It is noted that evaluating the message by comparing the characters of the message in a search index or index is same as evaluating the characters of the message with a linked list or with the available or predetermed list that matching the characters, because each item in the list contains a pointer to the next or preceding character(s) or vice versa may be used** or expanded for further generating fine or sophisticated search index in a computer system.

It would have been obvious to one of ordinary skill in the art of data processing at the time the invention was made to modify the cited steps as indicated in claims 1,6,11,16 of the co-pending application since the omission and addition of the cited limitations would have not changed the process according to which the method of evaluating characters in a message to generate a search index information. Specifically, the ordinary skilled artisan would have been motivated to modify claim 1 of the cited co-pending application by replacing evaluating the characters of the message to build a linked list with the evaluating the message by comparing the characters of the

message to a predetermined set by generating a search index. The cited substitute elements would not interfere with the functionality of the steps previously claimed and would perform the same function of evaluating characters in a message to generate a search index or linked list in a computer system. In re Karlson, 136 USPQ 184 (CCPA 1963)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

22. Claims 1, 9, 17, and 25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,6,11,16 of co pending Application No. **09/384,443**, Although the conflicting claims are not identical, they are not patentably distinct from each other because in the present application Independent Claims 1, 9, 17, and 25 are accepting an input of the characters of the message; evaluating the message by comparing the characters of the message to a predetermined set of candidate character sets to determine a match between the predetermined set of candidate character sets and the message; and generating a search index based on the results of the evaluation of the message and candidate character sets, while co-pending Application No. **09/384,443** independent Claims 1,6,11,16 are accepting an input of the characters of the message; and evaluating the message by comparing the characters of the message to a predetermined set of candidate character sets to determine a match between the predetermined set of candidate character sets and the message. **It is noted that**

limitation 'generating a search index based on the results of the evaluation of the message and candidate character sets are omitted in the co-pending application.

It would have been obvious to one of ordinary skill in the art of data processing at the time the invention was made to modify the cited steps as indicated in claims 1,6,11,16 of the co-pending application since the omission and addition of the cited limitations would have not changed the process according to which the method of evaluating characters in a message to generate search index information. Specifically, the ordinary skilled artisan would have been motivated to modify claim 1 of the cited co-pending application by replacing or omitting the limitation generating a search index based on the results that would have allowed to implement the evaluating characters in a message merely comparing the predetermined set of candidate character sets for match between character sets and message. The cited adding or omission of elements would not interfere with the functionality of the steps previously claimed and would perform the same function of evaluating characters in a message to generate a search index in a computer system. In re Karlson, 136 USPQ 184 (CCPA 1963)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

23. Claims 1, 9, 17, and 25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,10,19,28 of co pending Application No. **09/384,442**, Although the conflicting claims are not identical, they are not patentably distinct from each other because in the present application Independent Claims 1, 9, 17, and 25 are accepting an input of the characters of the message; evaluating the message by comparing the characters of the message to a predetermined set of candidate character sets to determine a match between the predetermined set of candidate character sets and the message; and generating a search index based on the results of the evaluation of the message and candidate character sets, while co-pending Application No. **09/384,442** independent Claims 1,10,19,28 are accepting an input of the characters of the message; and evaluating the message by comparing the characters of the message to a predetermined set of candidate character sets to determine a match between the predetermined set of candidate character sets and a portion of the message. **It is noted that limitation 'generating a search index based on the results of the evaluation of the message and candidate character sets are omitted in the co-pending application.**

It would have been obvious to one of ordinary skill in the art of data processing at the time the invention was made to modify the cited steps as indicated in claims 1,6,11,16 of the co-pending application since the omission and addition of the cited limitations would have not changed the process according to which the method of

evaluating characters in a message to generate a search index information.

Specifically, the ordinary skilled artisan would have been motivated to modify claim 1 of the cited co-pending application by replacing or omitting or adding the limitation generating a search index based on the results that would have allowed to implement the evaluating characters in a message merely comparing the predetermined set of candidate character sets for match between character sets and portion(s) of the message. The cited adding or omission of elements would not interfere with the functionality of the steps previously claimed and would perform the same function of evaluating characters in a message to generate a search index in a computer system. In re Karlson, 136 USPQ 184 (CCPA 1963)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

24. Claims 1, 9, 17, and 25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,8,15,22 of co pending Application No. **09/384,371**, Although the conflicting claims are not identical, they are not patentably distinct from each other because in the present application Independent Claims 1, 9, 17, and 25 are accepting an input of the characters of the message; evaluating the message by comparing the characters of the message to a predetermined set of candidate character sets to determine a match between the predetermined set of candidate character sets and the message; and generating a search index based on the results of the evaluation of the message and

candidate character sets, while co-pending Application No. **09/384,371** independent Claims 1,8,15,22 are accepting an input of the characters of the message; and evaluating the message by comparing the characters of the message to a predetermined set of candidate character sets to determine a match between the predetermined set of candidate character sets and the message. **It is noted that limitation 'generating a search index based on the results of the evaluation of the message and candidate character sets replaced with selecting a best match between the message and the candidate character sets in the co-pending application.**

It would have been obvious to one of ordinary skill in the art of data processing at the time the invention was made to modify the cited steps as indicated in claims 1,6,11,16 of the co-pending application since the omission and addition of the cited limitations would have not changed the process according to which the method of evaluating characters in a message to generate a search index information. Specifically, the ordinary skilled artisan would have been motivated to modify claim 1 of the cited co-pending application by replacing or omitting the limitation generating a search index based on the results that would have allowed to implement the evaluating characters in a message merely comparing the predetermined set of candidate character sets for match between character sets and message further would have resulted in best match between the message The cited adding or omission or replacing of elements would not interfere with the functionality of the steps previously claimed and

would perform the same function of evaluating characters in a message to generate a search index for match between the message and the character sets in a computer system. In re Karlson, 136 USPQ 184 (CCPA 1963)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

25. Claims 1- 2, 4-10, 12-18, 20-26, 28-32, 37, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tateno, US Patent No. 5778400 in view of Halstead, Jr. et al. [hereafter Halstead], US Patent No. 5946648.

26. As to Claims 1,9,17, 25, Tateno details a system which including 'evaluating characters in an inputted search string to generate a search index' [col 5, line 4-23, col 5, line 55-57, Abstract, fig 1], examiner interpreting characters in an inputted search string corresponds to Tateno's text or word(s), search index corresponds to fig 1, element 14, 'accepting an input of the characters of the search string' [col 5, line 24-26, col 6, line 60-67, fig 1], 'characters can be represented in any of a plurality of character sets corresponding to an undetermined language' [col 5, line 4-15, col 5, line 39-41, line 64-67, col 6, line 1-4, col 11, line 5-8], characters of search string corresponds to word(s) or text because text comprises sentences, words, phrases;' generating a search index based on the results of the evaluation of the search string and candidate character sets' [col 8, line 18-36, fig 1-3], examiner interpreting search index corresponds to Tateno's fig 1, element 14, character sets corresponds to tags or words of a structured document as detailed in col 8, line 23-24. It is, however, noted that Tateno does not specifically detail the claimed limitation 'evaluating the search string by comparing each of the characters of the search string to a plurality of predetermined set of candidate character sets'. On the other hand, Halstead details a system which including 'evaluating the search string by comparing each of the characters of the search string to a plurality of predetermined set of candidate character sets' [col 6, line

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54-63, col 7, line 48-61, col 9, line 40-50, col 10, line 20-40, line 63-67, col 12, line 65-67], comparing the characters of the search string corresponds to Halstead's matching of stem characters in the prefix analysis as detailed in fig 18-19, predetermined set of candidate character sets corresponds to prefix morphology file, fig 18, element 132.

It would have been obvious one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Halstead into searching through a tagged document for the location of a desired word in text using the tags as reference units for search and retrieval using search index system of Tateno because they are both directed to storing and identifying text strings [see Halstead Abstract, fig 3; Tateno Abstract, fig 3], while Tateno specifically teaches search index as detailed in fig 3, element 4. One of ordinary skill in the art at the time of applicant's invention would have been motivated to modify Tateno's reference, more specifically modify fig 4 to incorporate templates fig 14, element 98 matching characters connected to the matching, further forming a look up table containing predetermined characters because that would have allowed users of Tateno's search index system to control which relative combination of sets satisfies the evaluating the search string criteria, bringing the advantages of reduce dependency on static dictionaries and to avoid the access overhead and unknown word identification problems as suggested by Halstead [see col 3, line 55 65].

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27. As to Claims 2,10,18, 26, Halstead teaches a system which including 'comparing each character of the search string to an entry for each of the candidate character sets in a character table bank' [see fig 14-15, col 9, line 51-60, line 67, col 10, line 1-3, line 26-40], examiner interpreting character table bank corresponds to Halstead's look-up table as detailed in fig 14, element 90.

28. As to Claims 4,12,20, 28, Halstead details a system which including 'universal code is Unicode' [col 8, line 15-21], examiner interpreting Unicode corresponds to Halstead's 16-bit Unicode.

29. As to Claims 5,13,21, 29, Halstead details a system which including 'total number of characters matched to each of the candidate character sets' [col 9, line 51-67, col 10, line 1-3, fig 15].

30. As to Claims 6,14,22, 30, Halstead details a system which including 'selecting a best match based upon the total number of characters matched to each of the candidate character sets' [col 10, line 63-67, col 11, line 1-7].

31. As to Claims 7,15,23, 31, Tateno details a system which including 'evaluating the characters of a query string' [fig 1, col 5, line 18-23].

32. As to Claims 8,16,24, 32, Tateno details a system which including 'performing a search of the query string against search indices' [fig 1, 3,5,7,9, col 9, line 20-25], on the other hand Halstead teaches 'character set match' [see fig 15, col 12, line 65-67, col 13, line 56-61].

33. As to Claim 37, Tateno details a system which including 'search string to one or more character sets of a character bank by parsing the characters of the search string and identifying the one or more character sets of the character bank that express each of the characters of the search string' [col 7, line 59-67, col 8, line 1-4], on the other hand, Halstead teaches 'compares each of the characters' [col 9, line 40-50, col 10, line 20-40, line 63-67, col 12, line 65-67], compare each of the characters of the search string corresponds to Halsteads' matching of the stem characters in the prefix analysis as detailed in fig 18-19.

34. Claims 3,11,19,27, 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tateno, US Patent No. 5778400, Halstead, Jr. et al. [hereafter Halstead], US Patent No. 5946648 as applied to claims 1,9,17,25 above, and further in view of Houchin et al., [hereafter Houchin], US Patent No. 6321192.

35. As to Claims 3,11,19, 27, Halstead teaches a system which including universal code for that character and an indicator in the character table bank indicating whether each of the candidate character sets contains that character' [col 8, line 19-29],

however, both Tateno and Halstead do not specifically teach 'performing a logical mask between a universal code'. On the other hand, Houchin details a system which including 'performing a logical mask between a universal code' [see fig 3, fig 5, col 6, line 16-32].

It would have been obvious one of the ordinary skill in the art the time of the applicant's invention to combine the concepts taught by Houchin with the system of Tateno, Halstead because masking used to choose one of several output sequences based on the flag(s) condition, further mask to form the bit mask used to enable or disable various required conditions as detailed in Halstead [see col 6, line 21-23].

36. As to Claims 38-39, Halstead teaches a system which including 'compares each of the character sets of the character bank corresponding to each of the characters of the search string to pre-selected character sets' [see Abstract, col 7, line 57-67, col 8, line 1-8]. On the other hand, Houchin teaches 'character sets of a bit mask to determine a match between each of the character sets' [col 6, line 16-32].

37. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozbutun et al., [hereafter Ozbutun], US Patent No. 6141656 in view of Shakib et al., [hereafter Shakib], US Patent No. 5778213

38. As to Claims 33-36 Ozbutun teaches a system which including 'in a computer system comprising a processor, an input device and a storage device, which stores a character table bank comprising a predetermined number of columns and a number of character rows' [see fig 1, fig 7, col 2, line 7-10, col 4, line 15-49], Ozbutun specifically teaches a computer system having a input device such as detailed in fig 1, element 122, storage device, fig 1, element 107, further Ozbutun directed to databases, more specifically retrieving information from a database performing logical operations using bitmap indexes that are stored in a database, it is common knowledge that tables are part of database, 'a search index, which is accessible by a computer system and comprises a code page representing each of a plurality of electronic search strings that are indexed' [col 3, line 7-10, col 4, line 66-67, col 5, line 1-3], 'enabling the processor to create a mask comprising a number of mask columns equivalent to the predetermined number of columns in the character table bank, wherein the mask columns contain an indication of the character sets' [col 5, line 15-45, 46-54, col 7, line 15-54], 'enabling the processor to receive the electronic search string at the input device'[see fig 1, element 122], 'electronic search string comprising a plurality of characters, wherein the plurality of characters can be represented in any of a plurality of character sets corresponding to an undetermined language' [col 6, line 23-28, line 34-38], 'electronic search string received at the input device by accessing the corresponding character row of the character table bank for each of a predetermined number of characters of the electronic search string' [col 5, line 67, col 6, line 1-14, fig 2-3], examiner interpreting predetermined number of characters corresponds to fig 2, element 220 that contains

the portion of the bitmap corresponding to the range contained in range section element 219, 'performing a logical AND operation between each of the corresponding character rows and the mask' [see fig 2-3, col 5, line 65-67, col 6, line 1-14, line 16-28] , filling a character match list with an entry for each of the character sets that result in a non-zero result after the logical AND operation' [col 6, line 23-27, line 39-52, line 59-62], 'returning the character match list' col 7, line 42-46], 'enhancing the search index by indicating for each code page the character sets returned in the character match list' [col 7, line 1-14, line 29-35]. It is, however, noted that Ozbutun does not specifically teach 'evaluating the plurality of universal code characters'. On the other hand, Shakib teaches a system which including 'evaluating the plurality of universal code characters' [see Abstract, fig 1, fig 4, col 3, line 50-55], examiner interpreting universal code characters corresponds to Shakib's universal character set as detailed in fig 1, element 24, fig 4, element 24.

It would have been obvious one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Shakib et al., into performing logical operations using bitmap indexes found in databases of Ozbutun et al. because both are directed to database system for storing and retrieving data, more specifically Ozbutun is directed to performing logical operations on bitmap streams from segmented bitmaps in a database, specifically performing logical operations using bitmap indexes found in databases [see Abstract, col 4, line 66-67, col 5, line 1-3], while Shakib is directed to creating selected character set that is identified by tag associated with first table, while

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second part that containing universal character set that is associated with the tag of first table, thus building dynamic indices [see Abstract, fig 1, 4]. One of the ordinary skill in the art at the time of applicant's invention to modify Ozbutun's reference, to incorporate the teachings of Shakib's universal code characters of fig 1, element 24 because that would have allowed users of Ozbutun to control which relative bitmap segments that are not covered by a gap by searching for a set of overlapping bitmap segments by implementing Unicode, bringing the advantages of converting specified character set to the user-specified character set, more specifically converting one language to another language as suggested by Shakib [see col 4, line 56-67].

Response to Arguments

Applicant's arguments filed on 8/28/2002 have been fully considered, for the Examiner's response to the Applicant's arguments, see the discussion given below:

39. At page 11, Claims 1,9,17,25, applicant argues 'wherein the characters can be represented in any of a plurality of character sets corresponding to an undermined language features are not suggested or disclosed in Tateno, Halstead, or their combination.

As to the above limitation Tateno suggests 'characters can be represented in any of a plurality of character sets corresponding to an undermined language' [col 5, line 4-15, col 5, line 39-41, line 64-67, col 6, line 1-4, col 11, line 5-8], characters of search string corresponds to word(s) or text because text comprises sentences, words, phrases.

40. At page 12, line 5-9, Neither Tateno nor Halstead, alone or in combination disclose or suggest evaluating the search string by comparing each of the characters of the search string to a plurality of pre-determined candidate character sets

As to the above limitation, Halstead details a system which including 'evaluating the search string by comparing each of the characters of the search string to a plurality of predetermined set of candidate character sets' [col 6, line 54-63, col 7, line 48-61, col

9, line 40-50, col 10, line 20-40, line 63-67, col 12, line 65-67], comparing the characters of the search string corresponds to Halstead's matching of stem characters in the prefix analysis as detailed in fig 18-19, predetermined set of candidate character sets corresponds to prefix morphology file, fig 18, element 132.

41. The dependent claims 2,4-8,10,12-16,18,20-24,26,and 28-32 each dependent on independent claims 1,9,17, 25 are also rejected on the above analysis.

42. At page 12, line 22-28, Claims 3,11,19, 27, the combination of Tateno and Halstead fails to suggest or disclose at least the features.....

As to the above argument, Claims 3,11,19,27 are rejected under 35 USC 103(a) over Tateno,US Patent No.5778400, Halstead, Jr. et a., US Patent No. 5946648 as applied to the above claims 1,9,17,25, and further in view of Houchin et al. US Patent No. 6321192. As stated in the office action, both Tateno and Halstead do not specifically teach 'performing a logical mask between a universal code', although Halstead specifically teaches universal code for the character as detailed in col 8, line 19-29. On the other hand, Houchin teaches performing a logical mask between a universal code' [see fig 3, fig 5, col 6, line 16-32].

43. At page 13, line 7-11, Claim 33-36, amended feature of 'enabling the processor to receive the electronic search string at the input device.....

As to the above argument, Ozbutun suggests the amended feature of 'enabling the processor to receive the electronic search string at the input device' [see fig 1, element 122], 'electronic search string comprising a plurality of characters, wherein the plurality of characters can be represented in any of a plurality of character sets corresponding to an undetermined language' [col 6, line 23-28, line 34-38].

44. At page 13, line 22-27, nowhere does Ozbutun, disclose or suggest enabling the processor to create a mask comprising a number of mask columns equivalent to the predetermined umber of columns.....

As to the above argument, Ozbutun suggests 'enabling the processor to create a mask comprising a number of mask columns equivalent to the predetermined number of columns in the character table bank, wherein the mask columns contain an indication of the character sets' [col 5, line 15-45, 46-54, col 7, line 15-54]

Conclusion

The prior art made of record

- a. US Patent No. 5778400
- b. US Patent No. 5946648
- c. US Patent No. 6321192
- d. US Patent No. 6141656
- e. US Patent No. 5778213

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure


- d. US Patent No. 5758361
- e. US Patent No. 6098071
- f. US Patent No. 5793381
- g. US Patent No. 6081804
- h. US Patent No. 5805881
- i. PCT WO 01/20500
- j. EP457707
- k. EP457705
- l. EP1056024.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srirama Channavajjala whose telephone number is (703) 308-8538. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM Eastern Time. The TC2100's Customer Service number is (703) 306-5631.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (703) 305-9790. The fax phone numbers for the organization where the application or proceeding is assigned are as follows:

703/746-7238	(After Final Communication)
703/746-7239	(Offical Communications)
703/746-7240	(For Status inquiries, draft communication)
(703) 308-6606	(Art Unit)

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-9600.

SC 
Patent Examiner.
September 26, 2002.